

Amended Claims 050804 T7085

1. A method for increasing the level of 4-desmethyl sterols in a plant which has been modified to increase the production of 4-monomethyl and/or 4,4-dimethyl sterols compared to the wild type plant, which method comprises increasing the enzymatic demethylation of 4-monomethyl and 4,4-dimethyl sterols by increasing the activity of C4SMO in the plant by increased expression of a gene coding for C4SMO.
2. A method as claimed in Claim 1, wherein the plant has increased HMGR activity compared to the wild type plant.
3. A method as claimed in Claim 1 or Claim 2, wherein the plant has increased SMT1 activity compared to the wild type plant.
4. A method as claimed in any one of Claims 1 to 3, wherein the 4-desmethyl sterols are selected from betasitosterol, sitostanol, stigmasterol, brassicasterol, campestanol, isofucosterol, campesterol, episterol and mixtures thereof.
5. A method as claimed in Claim 1 wherein the gene is a heterologous gene.
6. A method as claimed in Claim 1 wherein the gene coding for C4SMO is derived from *Arabidopsis*.

7. A method as claimed in any one of Claims 1 to 6 wherein the plant is tobacco, canola, sunflower, rape or soy.

8. A method of transforming a plant which has been modified so as to incorporate a non-feed back inhibited HMGR gene in combination with sterolmethyltransferase 1, which comprises:

(a) transforming a plant cell with a recombinant DNA construct comprising a DNA segment encoding a polypeptide with C4SMO activity and a promoter for driving expression of said polypeptide in said plant cell, to form a transformed plant cell;

(b) regenerating the transformed plant cell into a transgenic plant; and

(c) selecting transgenic plants that have enhanced levels of 4-desmethyl sterols compared to wild type strains of the same plant.